

Buena Vista Ecological Reserve
(CNLM No: S037)

Annual Work Plan
October 1, 2011 - September 30, 2012

Prepared for:

U.S. Fish and Wildlife Service

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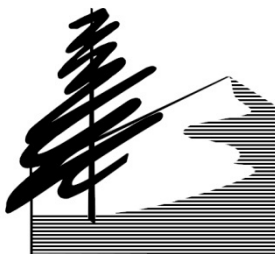
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October, 2011

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I. Introduction and Summary

This annual work plan has been developed from the management guidelines of the Buena Vista Creek Ecological Reserve Management and Funding Agreement (MFA) signed in August of 2007 (CNLM/CDFG 2007) between the Center for Natural Lands Management (CNLM or Center) and the California Department of Fish and Game (CDFG) and from the Draft Habitat Management Plan (HMP; CNLM 2008) for the site. Associated with the MFA and HMP is a detailed Property Analysis Record (PAR), which outlines a list of management tasks and costs that were agreed upon during CNLM's negotiations with CDFG.

The Buena Vista Creek Ecological Reserve (Reserve) is located along State Route 78 (SR-78) between the two termini of Haymar Drive (east and west) (Appendix 1). SR-78 is along the northern boundary and a golf driving range is located along the western boundary. Unprotected open space abuts to eastern and most of the southern boundaries, but some housing borders the reserve along the southwest and western margins.

CDFG has held title to the reserve since approximately March 2007 and CNLM manages it pursuant to the MFA (as of August 2007). The Buena Vista Creek Ecological Reserve Supplemental Environmental Project (SEP) Habitat Restoration Plan (HRP) is currently under the first year of implementation, and will enter into the second year of implementation in January 2012.

The purpose of this work plan is to identify the tasks and budget required to complete the management activities for the upcoming management year. The management year encompasses the period from October 1, 2011 through September 30, 2012. Unless otherwise stated, all tasks will be performed by CNLM's Preserve Manager, Patrick McConnell, and Rangers Roberto Bejar and Zadok Othniel.

Summary of Tasks and Goals for the Management Year:

- Document sensitive animal species observed
- Conduct brown-headed cowbird (*Molothrus ruber*) trapping
- Continue to develop a plant list for the site and conduct sensitive plant surveys
- Continue expanding priority weeds for treatment as other weed species become scarce
- Coordinate with the San Elijo Lagoon Conservancy's Carlsbad Watershed Network (CWN) on continuing nonnative plant removal efforts and in enhancing open areas
- Continue implementing the SEP
- Coordinate with contractors to remove upland exotic plants
- Involve Preserve Calavera volunteers in the planting and maintenance of the SEP restoration
- Manage fire breaks that occur on the reserve
- Patrol and conduct site enforcement
- Remove trash and debris
- Maintain existing fences and gates

- Prepare and provide to the wildlife agencies an annual report that describes the management activities and information gathered during the fiscal year
- Provide an accounting of funds to be spent in the management year

Appendix 1 provides vicinity and location maps of the Reserve location. Appendix 2 (Annual Task Schedule) identifies the approximate schedule of field work throughout the management year.

II. Management Activities

The following sections identify and describe the activities to be performed during the next management year. Based upon the Property Analysis Record (PAR) developed by CNLM to outline long-term management tasks and costs, management activities can be broken down into seven tasks: Capital Improvements, Biotic Surveys, Habitat Restoration and Maintenance, Public Services, Reporting, Office Maintenance, and Operations. Each of these categories is discussed below.

A. Capital Improvements

The maintenance of existing fencing, signs, gates, and the mini-kiosks is the primary capital improvement (site construction/maintenance) tasks this management year.

1. **Fences, gates and signs.** Fences, gates and signs will be maintained during the year as necessary.

B. Biological Surveys

Sensitive animal species in both the riparian and upland habitats will be mapped as they are encountered, and any rare plants found on the reserve will be mapped during focused surveys. Additionally, the plant species list will be expanded by performing plant surveys and supplying vouchers to the San Diego Natural History museum (SDNHM).

1. **Sensitive Plant Surveys** Sensitive plant species surveys will be conducted in the spring of 2011. The smaller stands of vegetative thread-leaved brodiaea (*Brodiaea filifolia*) will be counted, and searches for flowering individuals among the large brodiaea locality found winter 2011 will continue. This particular locality may be used as a regular counting block to be added to the long-term monitoring of thread-leaf brodiaea among other CNLM preserves. Any nearby or new occurrences will be mapped.
2. **Plant list** Surveys will be conducted to add to a growing plant species list for the site. Upland species have virtually all been accounted for, but more work is needed in the riparian areas. Some exotic species (*Cupressus* sp., *Iris* sp.) are doing quite well in the floodplain but are not officially known to exist outside of managed ornamental landscapes. As with the previous management year, more work needs to be

accomplished supplying voucher specimens to the SDNHM, so that the county checklist can continue to be updated, and so that we can have positive ID's.

C. Habitat Restoration and Maintenance

1. **Trap Brown-headed Cowbirds** Brown-headed cowbird trapping will be conducted during the spring months, likely from April 1 to June 1. A contractor efficient in such methods will be used, and traps will be checked daily (following appropriate protocols) during the time that they are installed.
2. **Mow Fuel Breaks** Existing fuel breaks, located along the Eucalyptus trees near the terminus of Marron Road, in the former agricultural land south of the Adobe, and along the southern boundary of the property, will be mowed in the spring to maintain the defensible space located behind the residential communities.
3. **Mow Weedy Upland Areas** Weedy areas located near the southern boundary of the Reserve will be mowed (See Figure 4, CNLM 2011). The hope is that native forbs and grasses will be allowed further resources for propagation and growth if the non-native biomass is cut prior to seed set. Progress in this area will be assessed, and enhancement efforts will be continued as needed based on our appraisal of conditions. Mowing efforts will proceed when the thread-leaved brodiaea are between vegetative and flowering production, in order to minimize any threat to their physical integrity.
4. **Nonnative Plant Removal and Oversight**
 - a. **CWN** CNLM will be providing guidance and oversight to CWN while they continue to re-treat and remove nonnative plants from the riparian corridor. CWN has virtually extirpated most of the following ten invasive plants: Pampas grass (*Cortaderia selloana*), Mexican fan palm (*Washingtonia robusta*), Canary Island date palm (*Phoenix canariensis*), *Acacia* species, *Eucalyptus* species, giant reed (*Arundo donax*), shamal ash (*Fraxinus uhdei*), perennial pepperweed (*Lepidium latifolium*), Brazillian pepper (*Schinus terebenthifolius*), and cape ivy (*Delairea odorata*). Shamal ash and Canary Island date palms may be re-sprouting in many locations, and thus we will keep CWN aware of needed re-treatments. See CNLM 2011 *Appendix 3* for maps of the enhancement areas.
 - b. **Contractors –Riparian** A weed removal priority list for the riparian areas of the reserve has been created (Table 1). The majority of the weeds contracted for targeting are perennial or biennial weeds that appear to have a fast rate of spread. Other annual or ephemeral perennial species may be targeted as hardy perennials disappear. Looking forward, annual and biennial weed control may not be effective without also planting native perennials (see 5.b. in this section). We expect to utilize funds from the endowment, as well as funds available from SEP funds to pursue eradication of riparian weeds. CNLM has budgeted for two 5-man crew days to be drawn from the endowment and expects as many as 10 five-man crew days from the SEP to be used in the control of riparian weeds.

Table 1. Weed treatment priorities and history

Common name	Species	CalIPC ranking
<i>Species targeted 2008-2011 (CWN project funds)</i>		
Pampas grass	<i>Cortaderia selloana</i>	High
Palms	<i>Washingtonia robusta</i> , <i>Phoenix canariensis</i>	Moderate, Limited
Acacia	<i>Acacia longifolia</i> , <i>A. Cyclops</i>	Not listed
Eucalyptus	<i>Eucalyptus</i> spp.	Limited to Moderate
Giant reed	<i>Arundo donax</i>	High
Shamal ash	<i>Fraxinus uhdei</i>	Not listed
Perennial pepperweed	<i>Lepidium latifolium</i>	High
Brazilian pepper	<i>Schinus terebinthifolius</i>	Limited
German ivy	<i>Delairea odorata</i>	High
<i>Species targeted 2009-2011 (Endowment and SEP funds)</i>		
Florsits smilax	<i>Asparagus asparagoides</i>	Moderate
Iceplant	<i>Carpobrotus edulis</i>	High
Artichoke thistle	<i>Cynara cardunculus</i>	Moderate
English or Algerian ivy	<i>Hedera</i> sp.	High
Big periwinkle	<i>Vinca major</i>	Moderate
Edible fig	<i>Ficus carica</i>	Moderate
Fennel	<i>Foeniculum vulgare</i>	High
<i>Species targeted 2010-2011 (endowment and SEP funds)</i>		
Himalayan blackberry	<i>Rubus armeniacus</i>	High
Chinese elm	<i>Ulmus parvifolia</i>	Not listed
Harding grass	<i>Phalaris aquatic</i>	Moderate
Fireweed groundsel	<i>Senecio linearifolius</i>	Not listed
Bull thistle	<i>Cirsium vulgare</i>	Moderate
Johnson grass	<i>Sorghum halapense</i>	Not listed
Black walnut	<i>Juglans nigra</i>	Not listed
Milk thistle	<i>Silybum marianum</i>	Limited
Poison hemlock	<i>Conium maculatum</i>	Moderate
Hardinggrass	<i>Phalaris aquatica</i>	Moderate
<i>Possible additional targets 2011-2012 (Endowment and SEP funds)</i>		
Panic Veldt grass	<i>Ehrharta erecta</i>	Moderate
Calla lilly	<i>Zantedeschia</i> sp.	Limited
Bermuda buttercup	<i>Oxalis pes-caprae</i>	Moderate
Nasturtium	<i>Tropaeolum majus</i>	Not listed
Castor bean	<i>Ricinus communis</i>	Limited
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate
Bristly ox-tongue	<i>Picris echioides</i>	Limited

- c. **Contractors –Uplands** On some hillsides, extant native grassland and scrub fragments can be enhanced and possibly expanded over time, providing yearly weed treatments take place before any seed is set. Crews will be contracted to clear areas of black mustard, Italian thistle, and fennel along the higher southern margins, and to additionally remove thatch from areas that still house native perennials and/or biennials. The methodology we plan to continue from the previous year is to limit field crews to seven days in this endeavor, spaced over three visits attempt to keep any weeds from going to seed. Three 5-man crew days are to be used solely for fennel treatments to cover the remainder of the upland reserve areas.
- d. **Reserve Manager** CNLM personnel will also control select weeds along riparian areas of the reserve, and riparian edges, mostly focusing on eradicating bull thistle, milk thistle, and Johnson grass, all of which are patchy in distribution, and may easily be missed by crews.

5. **Habitat Restoration**

- d. **SEP** CNLM will work with Preserve Calavera in overseeing volunteer activities that benefit the establishment of native vegetation to the restoration. Hydroseed mixes will be applied to both this SEP restoration, and to openings at the restoration area on the north side of the creek, early fall. CNLM is currently in the process of ordering more container plants in order to add a few more species (*Epilobium canum* ssp. *canum* and *Lonicera subspicata*) to the cover in the riparian transition area.
 - e. **CWN** See CNLM 2011 for details on the results of the enhancement areas. CNLM is partnering with David Varner of CWN to expand more planting and subsequent weed treatments into other weedy openings and understory areas of the reserve. Visitations to some of these areas took place during the 2010-2011 management year, and we met once again to review budgetary constraints on expanding enhancement areas. The only robust method of adequately addressing openings currently filled with annual exotic forbs and grasses is to plant these openings with native perennials such as mugworts (*Artemisia* spp.), California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), San Diego sedge (*Carex spissa*), yerba mansa (*Anemopsis californica*), and false indigo (*Amorpha fruticosa*), as well as willows or other riparian trees, and remove weeds among the plantings until they fill in. This may then be followed by native annual or biennial seed introduction.
6. **Trash Clean-Up** Trash and debris accumulate in the reserve due to transient encampments, and from high water events transporting trash from upstream locations. CNLM will continue working with the City or local environmental groups to help coordinate and staff these public cleanup events. This management year we will also continue to personally remove trash as we find it.

D. Public Services

Public service activities include patrolling the reserve and response to emergencies. However, other opportunities for public service will undoubtedly be forthcoming during the year, such as coordinating local groups, individuals volunteering for reserve projects, and leading class field trips from local schools. Whenever possible, management will try to accommodate these activities.

1. **Patrols** Patrols will be performed about two to four times per month. Routine mending of fence breaks, collection of trash and debris, and replacement of signs are additional tasks undertaken during patrols. Additionally, CNLM employees will work with the City of Carlsbad Police Department to eliminate habitation of the reserve by transients. Transients had been living in the reserve for decades and CNLM intends to keep the reserve clear of habitation because it has compromised the health of the habitats in the reserve. Observations of animal sightings and new human impacts will be gathered during patrols as well.
2. **Emergency Response** Hours have been allocated from the current budget for management to respond to emergencies on the reserve. Such emergencies could include response to wildfires and problems reported by neighbors.
3. **Public Outreach** Several volunteer events will occur during the management year with the public (i.e., environmental groups and the general public). Most of these activities will occur with Preserve Calavera as part of their participation in the SEP. We will also likely be working with Pacific Ridge School as part of their curriculum.

E. Reporting

Activities included within reporting requirements include the management of the reserve's database/GIS system and the production of various status reports to the USFWS, CDFG, and CNLM administration.

1. **Database/GIS Management** Data derived from biotic surveys, routine patrols and restoration activities will be entered into and maintained in the reserve's existing database and GIS system by CNLM. Efforts will be made to coordinate and standardize database fields and parameters with other reserves.
2. **Reports**
 - a) **Year-End/Agency Reports** By the end of December 2011, an annual report will be prepared by the reserve manager detailing the results of the (previous management) year's management activities. This report will include recommendations for the continuation of various activities for the following management year and will be submitted to the USFWS, CDFG, and the City of Carlsbad as required under permit reporting conditions.

- b) **Annual Work Plan** The work plan for the next management year will be formulated by the end of this management year and will be based upon experiences during previous years operations. This work plan will be submitted to the USFWS, CDFG, and the City of Carlsbad.
- c) **Management Plan** A draft five-year management plan was provided to CDFG during the 2007-2008 management year which runs through 2013. Revisions are planned for the 2012-2013 fiscal year.

F. Office Maintenance

Reserve staff will maintain offices in an organized manner to facilitate maximum efficiency. This section of the budget includes outlays for general office work, utilities, and telephones, among other items/tasks.

G. Operations

Operations include the training and professional growth of reserve management personnel, and inspection of the reserve by CNLM administration. Funds have been allocated in the current budget for reserve management to attend workshops or seminars during the management year. Also included within this category are annual employee reviews.

III. Workload and Budgets

A. Supervision and Staffing

The Regional Preserve Manager (RPM) will be supervised by CNLM's Director of Conservation Science (DCS), Dr. Deborah Rogers. Tasks and priorities will be coordinated by the RPM. The RPM, Markus Spiegelberg will supervise the Preserve Manager and Rangers. Additionally, Dr. Rogers will assist with document review and scientific research conducted on Center preserves.

B. Budgeting

The total budget for this management year (excluding the SEP) is \$38,680.15. Every effort will be made by reserve staff management to allocate time and expenses according to this estimated budget.

IV. References

CNLM/CDFG 2007. Buena Vista Creek Ecological Reserve Management and Funding Agreement with attachments. August 20, 2007.

CNLM 2008. Habitat Management Plan for the Buena Vista Creek Ecological Reserve, 2008-2012. In review.

CNLM 2011. Buena Vista Creek Ecological Reserve Annual Report 2010-2011. October 2011.

V. Appendices

Appendix 1: Reserve Location Maps

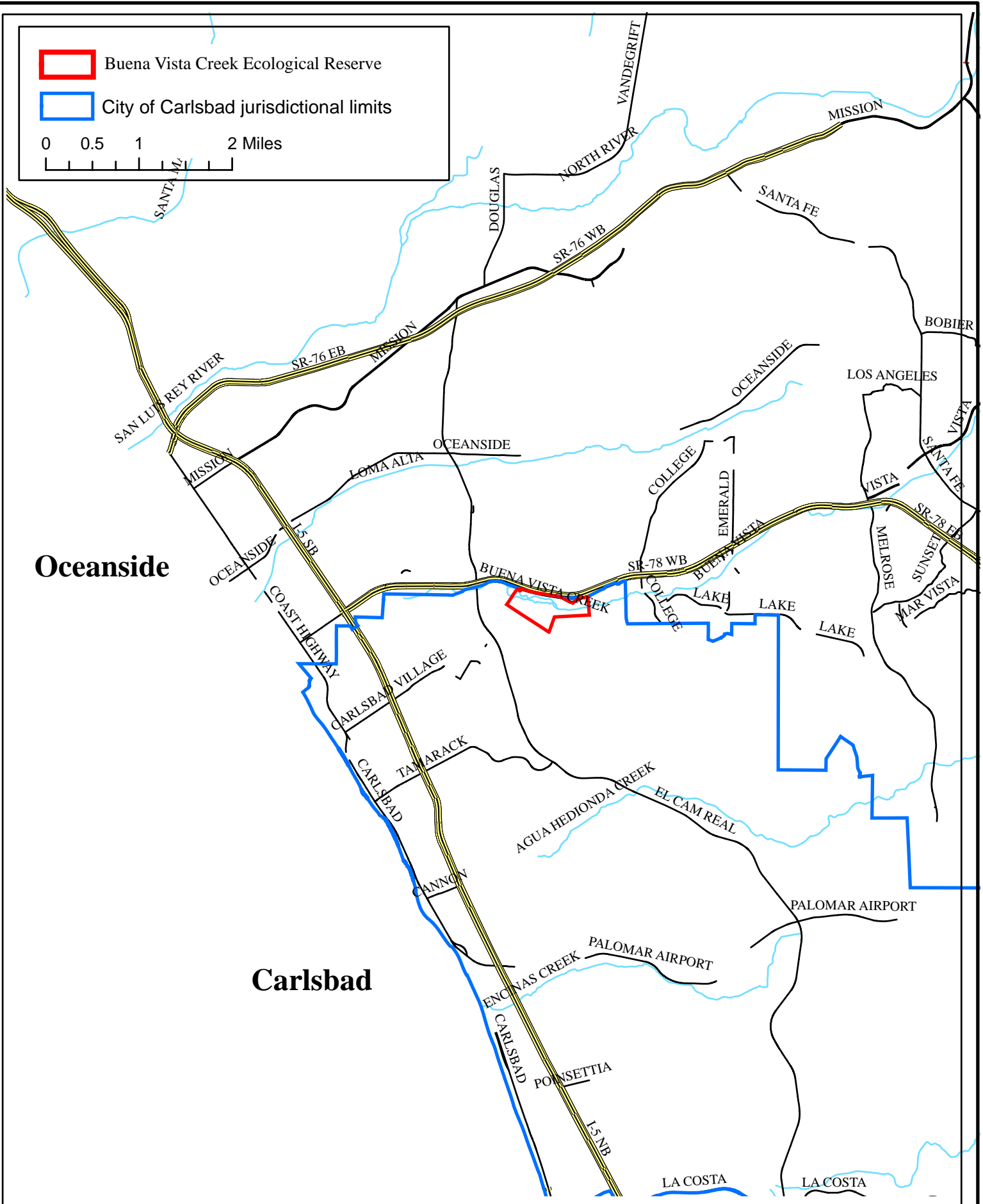


Figure 1
Project Location
Buena Vista Creek Ecological Reserve-Carlsbad, CA





Figure 2
Project Vicinity
Buena Vista Creek Ecological Reserve-Carlsbad, CA

Appendix 2: Annual Task Schedule

Task	October- December 2011	January-March 2012	April - June 2012	July - September 2012
Riparian exotic plant removal, including oversight of CWN	X			X
Upland exotic plant removal		X	X	
Trap cowbirds			X	
Sensitive plant surveys		X	X	
Plant list			X	X
GIS/Database			X	
Habitat maintenance: fuel breaks			X	
Habitat restoration & enhancement	X	X	X	X
Fencing/Signage/ Trash collection	X	X	X	X
Patrolling	X	X	X	X
Reports	X			X
Public outreach	X	X	X	X

Appendix 3: CWN Enhancement Locations

Carlsbad
Watershed Network
Carlsbad
Hydrologic Unit
Invasive Vegetation
Reveg
JAN-FEB 2011
Work Area: BV Creek
Watershed: Buena Vista

Legend

- *Salix lasiolepis*
- grasslands
- palm_grvyrd

Grasslands Sites Plants
4700 *Distichlis spicata*
1000 *Sporobolus airoides*
500 *Juncus mexicanus*

site	PALETTE	NOTES
G1	Sporobolus-Distichlis-Juncus	Ground alkaline, heavy clay
G2	Sporobolus-Distichlis-Juncus	Alkaline soils adjacent to pickleweed and Scirpus
G4	Sporobolus-Distichlis-Juncus	Adjacent to Cyperus-distichlis
G3	Distichlis-Juncus	Adjacent to Distichlis

1 inch = 159 feet
Imagery: Summer 2009

